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# INTERNATIONAL PRELIMINARY EXAMINATION REPORT



(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>NO 726744/PCT</b>	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. <b>PCT/EP 03/12053</b>	International filing date (day/month/year) <b>30.10.2003</b>	Priority date (day/month/year) <b>30.10.2002</b>
International Patent Classification (IPC) or both national classification and IPC <b>A21D8/04</b>		
Applicant <b>NESTEC S.A. et al.</b>		

- This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 6 sheets, including this cover sheet.  
  
☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).  
  
 These annexes consist of a total of    sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand  <b>02.04.2004</b>	Date of completion of this report  <b>09.02.2005</b>
Name and mailing address of the International preliminary examining authority:   <b>European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016</b>	Authorized Officer  <b>Piret-Viprey, E</b>  Telephone No. +31 70 340-1039  

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International application No. **PCT/EP 03/12053**

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1-12 as originally filed

**Claims, Numbers**

1-18 as originally filed

**Drawings, Sheets**

1-3 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
  - ☐ the language of publication of the international application (under Rule 48.3(b)).
  - ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:
- ☐ contained in the international application in written form.
  - ☐ filed together with the international application in computer readable form.
  - ☐ furnished subsequently to this Authority in written form.
  - ☐ furnished subsequently to this Authority in computer readable form.
  - ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
  - ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.
4. The amendments have resulted in the cancellation of:
- ☐ the description, pages:
  - ☐ the claims, Nos.:
  - ☐ the drawings, sheets:

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes: Claims	3,11,18
	No: Claims	1,2,4-10,12-17
Inventive step (IS)	Yes: Claims	
	No: Claims	1-18
Industrial applicability (IA)	Yes: Claims	1-18
	No: Claims	

**2. Citations and explanations**

**see separate sheet**

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**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

The following documents (D1-D5) are referred to in this communication; the numbering will be adhered to in the rest of the procedure:

D1: US-A-3026205  
D2: US-A-2615810  
D3: WO-A-9953769  
D4: DD-A-128201  
D5: Bäcker Und Konditor

1 - The application does not meet the requirements of Article 6 PCT, because claims 16 is not clear.

It is clear from the description on page that the following feature is essential to the definition of the invention: "thermostable alpha-amylase".

Since independent claim 16 does not contain this feature it does not meet the requirement following from Article 6 PCT taken in combination with Rule 6.3(b) PCT that any independent claim must contain all the technical features essential to the definition of the invention.

**2 - Remarks:**

2.1 - Taking into account the comments of the applicant, the terms "thermostable" and "the alpha-amylase does not pre-treat the batter or the dough" are interpreted respectively as "active at a temperature of about 70 to 105°C" and "the alpha-amylase does not act before the baking step".

2.2 - D1 can be used for assessing the novelty of the claims 1-18 because none of these claims exclude an enzyme active during and after the baking step

2.3 - D2 and D3 can be used for assessing the novelty of claims 1-18 because none of these claims exclude an enzyme presenting an anti-staling effect.

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2.4 - Claim 2 of D3 indicates that the anti-staling amylase has optimum activity in bread at 70-90°C, this falls in the thermostable activity, see paragraph 2.1.

3 - Furthermore, the above-mentioned lack of clarity notwithstanding, the subject-matter of claims 1,2,4-10,12-17 is not new in the sense of Article 33(2) PCT, and therefore the criteria of Article 33(1) PCT are not met.

- D1 describes in col.2, l.17-37 and example VIII the production of crackers which comprises the incorporation of heat-stable alpha-amylase showing a maximum activity at temperatures of 80°C. A certain degree of activity is retained even at a temperature of 100°C. At higher temperature the enzyme is rapidly and completely inactivated.

The subject-matter of claims 1,2,4,6-10,13-15 is therefore not new.

- D2 describes in col.1, l.28-31, l.39-50, ex. I,II and cl. 1 a process of making bakery products (e.g. biscuit or cracker) which comprises incorporating in a dough a heat-stable alpha amylase. The enzyme is stable up to temperatures of 80°C to 90°C (above the starch gelatinization point)..

The subject-matter of claims 1,2,6-10,13-15 is therefore not new.

- D3 describes on p.2, l.5-28, on p.4, l.28-32 and cl. 1-4,11,16 the preparation of dough and baked products (e.g. biscuit) comprising incorporating an anti-staling amylase (heat-stable), a phospholipase and eventually additional enzymes (e.g. xylanase or protease).

The subject-matter of claims 1,2,4-10,12-15 is therefore not new.

- D4 describes in ex. 2 the preparation of wafers from a batter comprising water, alpha-amylase, protease, wheat flour, salt, sodium hydrogenocarbonate.

The subject-matter of claims 16 and 17 is therefore not new.

- D5 describes in Tab. 2 and p.23, right-hand col., par.2 the influence of addition of enzymes (alpha-amylase and protease) on the production of wafers.

The subject-matter of claims 16 and 17 is therefore not new.

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4 - Dependent claims 3,11 and 18 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step, the reasons being as follows:

- In claim 3 a slight constructional change in the product of claim 1 is defined which comes within the scope of the customary practice followed by persons skilled in the art, especially as the advantages thus achieved can readily be foreseen.
- In claim 11 a slight constructional change in the process of claim 9 is defined which comes within the scope of the customary practice followed by persons skilled in the art, especially as the advantages thus achieved can readily be foreseen.
- In claim 18 a slight constructional change in the method of claim 16 is defined which comes within the scope of the customary practice followed by persons skilled in the art, especially as the advantages thus achieved can readily be foreseen.

Consequently, the subject-matter of claims 3,11 and 18 lacks an inventive step.